

Antifreeze Liquid

Accelerating admixture for concrete and cementitious mortars

DESCRIPTION OF PRODUCT

Antifreeze Liquid is a calcium chloride based, liquid hardening-accelerator admixture.

WHERE TO USE

- Mixing cementitious mortar during the winter time.
- Production of ready mix and precast concrete, with a reduction in handling time and the time required to remove formwork, including vibro-compressed concrete (pipes, floors, beads, blocks, etc.).

TECHNICAL CHARACTERISTICS

Antifreeze Liquid is a hardening accelerator-based admixture made according to a formula developed in MAPEI's own research laboratories.

When added to the mix at the recommended dosage, **Antifreeze Liquid** improves the hydration reaction of the cement, with a minimum influence on normal setting times.

The following improvements are achieved using **Antifreeze Liquid**:

- considerable increase of initial mechanical strength after 24 hours compared with mixes without the admixture, even at low temperatures;

- no loss in final mechanical strength;
- easier, quicker removal of formwork;
- elimination of problems caused by freezing of the concrete.

RECOMMENDATIONS

- **Antifreeze Liquid** should never be used in reinforced concrete structures.
- Do not add **Antifreeze Liquid** to the mixing water.
- Do not add more than the recommended dose of **Antifreeze Liquid**: setting may be accelerated.
- **Antifreeze Liquid** does not increase the strength of concrete which hardens during freeze-thaw cycles. To make XF exposure-class concrete according to EN 206-1 standards, add **Mapeplast PT1** air entraining agent.

APPLICATION PROCEDURE

Preparing the mix

Add **Antifreeze Liquid** at a rate of 1-2 l per 100 kg of cement together with all the other components: cement, aggregates and water.

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Appearance:	liquid
Colour:	red
Density according to ISO 758 (g/cm³):	1.35 ± 0.03 at +20°C
Solids content according to EN 480-8 (%):	37 ± 1.9
Principal action:	mechanical strength accelerator after short curing cycles and at temperatures lower than +10°C
Classification according to EN 934-2:	hardening accelerator admixture, table 7
Alkali content (Na₂O equivalent) according to EN 480-12 (%):	< 2.0
Storage:	12 months, protect from frost
Hazard classification according to EC 1999/45:	irritant. Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet
Customs class:	3824 40 00

Continue mixing for a few minutes until a homogenous mix is obtained.

Guidelines when preparing cementitious mixes

Even if **Antifreeze Liquid** is added to the mix, the usual guidelines when preparing concrete during cold periods must be followed:

- The components which make up the mix (cement, sand and gravel) must be heated up to a few degrees above zero.
- Use cement which has been stored at a temperature of at least +5°C.
- Cast the mix in the morning where possible, to exploit the normal increase in temperature which takes place during the daytime.
- Do not cast at a temperature lower than -10°C if a drop in temperature is forecast in the hours immediately after casting.
- Do not use slow-setting cement: where possible, use CEM I 42.5R at a dose of at least 300 kg/m³.
- Use the lowest water-cement ratio possible.

- Protect the cast material, especially if it has a thin section, using jute or paper sacks to help keep hydration heat inside the material.

COMPATIBILITY WITH OTHER PRODUCTS

Antifreeze Liquid may be used in conjunction with plasticisers and super-plasticisers from the **Dynamon**, **Mapefluid** and **Mapeplast** ranges of products.

Antifreeze Liquid is compatible with other products used in the production of special concrete, and in particular with:

- **Viscofluid SCC** and **Viscofluid SCC/10** viscosity regulator admixes, for preparing self-compacting concrete;
- **Mapelast SF** micro-silica-based powder, used in the production of concrete with "top quality" properties of mechanical strength, waterproofing and durability;
- **Expacrete** expanding agent used in the production of shrinkage compensated concrete;
- **Mapeplast PT1** air-entraining agent used in the production of concrete resistant to freeze/thaw cycles;
- limestone and other filler materials, used for mixing self-compacting concrete and any type of concrete which requires such filler materials;
- **DMA 1000**, **DMA 2000** and **DMA 3000 Form Release Agents**, used for stripping formwork from concrete;
- **Mapecure E** and **Mapecure S** curing compounds, for protection against rapid evaporation of the water used for blending the mix in concrete structures without form boxes (e.g. floors).

DOSAGE

Dosage in volume:

from 1 to 2 l/100 kg cement, according to the temperature and mechanical strength required.

PACKAGING

Antifreeze Liquid is available in bulk, 200 l drums, 1000 l tanks and in 6, 12 and 30 kg tins.

STORAGE

Antifreeze Liquid can be stored for 12 months in sealed containers and protect from frost.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Antifreeze Liquid is irritant to eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Avoid contact with skin. Use protective gloves and goggles and the usual precautions to be taken when handling chemical products. For further and complete information about a safety use of our product please refer to our latest version of the Material Safety Data Sheet.

FOR PROFESSIONAL USERS.

WARNING

While the indications and guidelines contained in this data sheet correspond to the company's knowledge and wide experience, they must be considered, under all circumstances, merely as an indication and subject to confirmation only after long-term, practical applications. Therefore, anybody who undertakes to use this product, must ensure beforehand that it is suitable for the intended application and, in all cases, the user is to be held responsible for any consequences deriving from its use.

Please refer to the current version of the Technical Data Sheet, available from our web site www.mapei.com.au

All relevant references for the product are available upon request and from www.mapei.com



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